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EXAMINER	
CROW, ROBERT THOMAS	
ART UNIT	PAPER NUMBER
1634	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	03/27/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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Office Action Summary	Application No.	Applicant(s)	
	10/713,479	LIU ET AL.	
	Examiner	Art Unit	
	Robert T. Crow	1634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 December 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12 and 14-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12 and 14-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

FINAL ACTION

Status of the Claims

1. This action is in response to papers filed 14 December 2006 in which claims 1-19 were amended, claims 13, 31, and 36-45 were canceled, and no new claims were added. All of the amendments have been thoroughly reviewed and entered.

The interview summary is acknowledged and the interview record is complete.

The previous rejections under 35 U.S.C. 112, second paragraph, are withdrawn in view of the amendments; however, new rejections of the claims are presented as necessitated by the amendments. Applicant's arguments have been thoroughly reviewed and are addressed following the rejections.

The previous rejections under 35 U.S.C. 102(b) and 35 U.S.C. 103(a) not reiterated below are withdrawn in view of the amendments. Applicant's arguments have been thoroughly reviewed and are addressed following the rejections necessitated by the amendments.

Claims 1-12 and 14-18 are under prosecution.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-11 and 14-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-18 are indefinite in the claim 1, which recites each of the following limitations.

A. The limitation "a photoelectrochemical label selective for non-covalently binding double-stranded nucleic acids over single stranded nucleic acids" in lines 6-7 of claim 1. It is unclear how the label defines a **structural** limitation of the apparatus because the label is a part of the contents of the apparatus when the apparatus used.

B. The limitation "a sacrificial reductant for contacting with the nucleic acid probe " in line 9 of claim 1. It is unclear how the reductant defines a **structural** limitation of the apparatus because the reductant is a part of the contents of the apparatus when the apparatus used.

C. It is suggested the claims be amended to recite only structural limitations of the apparatus.

Response to Arguments

A. Applicant argues on page 8 of the Remarks filed 14 December 2006 that the amendments to the claims structurally link the photoelectrochemical label and the sacrificial reductant to the recited apparatus.

However, the amendments merely recite an **intended use** for each of the photoelectrochemical label and the sacrificial reductant, and do not establish their **structural** relationship to the apparatus. An exemplary structural limitation includes a label chamber containing a solution of the label, or a fluid conduit comprising a sacrificial reductant. Because the claims are to an apparatus and no structural relationship is established between the apparatus and either the photoelectrochemical label or the sacrificial reductant, the claims are rejected under 35 USC 112, second paragraph as indefinite.

B. Applicant has cited MPEP 2172.01 to support the argument that the claims are not indefinite.

However, MPEP 2172.01 clearly states that "a claim which fails to interrelate essential elements of the invention as defined by applicant(s) in the specification may be rejected under 35 U.S.C. 112, second paragraph, for failure to point out and distinctly claim the invention. In the instant case, it is unclear how the label and the reductant define **structural** limitations of the apparatus because they are part of the contents of the apparatus when the apparatus used. Thus, the rejection of the claims under 35 USC 112, second paragraph, is proper.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-2, 4, 6-10, and 14-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Hashimoto et al (U.S. Patent No. 5,776,672, issued 7 July 1998) as evidenced by Roberts et al (U.S. Patent Application Publication No. US 2004/062930 A1, published 1 April 2004).

It is noted that a prior art reference is considered as a whole and for all it stands for. Thus, while the rejections listed below present a modified interpretation of the teachings of Hashimoto et al solely for the purpose of clarity, the claims remain rejected over same prior art as in the previous Office Action. The teachings of Roberts et al are solely relied upon as evidence of the electrochemical behavior of amines.

Regarding claims 1 and 10, Hashimoto et al teach a apparatus for detecting a target nucleic acid. In a single exemplary embodiment, Hashimoto et al teach Figure 4, which comprises a support comprising an electrode and a nucleic acid probe attached thereto; namely, reaction cell 32 having a bottom surface with electrode 33 having a nucleic acid probe attached thereto (column 29, lines 24-52). The nucleic acid probe comprises a sequence complementary to the target nucleic acid sequence; namely, a gene sample (column 29, lines 24-52). Hashimoto et al further teach an intercalating agent is present (column 29, lines 24-52); the intercalating agent is the noncovalent photoelectrochemical label comprises $[Ru(bipy)_3]^{2+}$ (e.g., tris (bipyridyl) ruthenium salt; column 4, line 30), which is selective for double-stranded nucleic acids over single stranded nucleic acids. Hashimoto et al teach further teach a sacrificial reductant; namely, stearylamine (column 10, lines 10-15), which is a primary amine. Figure 4 further comprises a light source; namely, optical fiber 37, which causes electrochemiluminescence (column 29,

lines 24-52), and therefore is of sufficient energy to initiate a photoelectrochemical reaction of the label for irradiating the probe. Hashimoto et al further teach a data collection controller for measuring a current at the electrode in the form of a potentiostat and a computer (column 11, lines 39-44).

As evidenced by Roberts, primary amines are recognized in the prior art as sacrificial reductants. Roberts teaches that primary amines undergo electrochemical reduction (paragraph 0062), and are thus sacrificial reductants.

Regarding claim 2, Hashimoto et al teach the apparatus of claim 1, wherein the nucleic acid probe comprises a DNA sequence (Example 1, column 14).

Regarding claim 4, Hashimoto et al teach the apparatus of claim 1, wherein the target nucleic acid sequence comprises a DNA sequence (Example 1, column 14).

Regarding claim 6, Hashimoto et al teach the apparatus of claim 1, wherein the support comprises an array of nucleic acid probe elements (Figure 10).

Regarding claim 7, Hashimoto et al teach the apparatus of claim 6, wherein the array comprises greater than about 10 of nucleic acid probe elements (Figure 10).

Regarding claim 8, Hashimoto et al teach the apparatus of claim 1, wherein the electrode comprises gold (column 8, lines 43-55).

Regarding claim 9, Hashimoto et al teach the apparatus of claim 1, wherein the noncovalent photoelectrochemical label is a compound comprising a ruthenium and 1,10-phenanthroline derivative; namely, a tris (phenanthroline) ruthenium salt (column 4, lines 24-26).

Regarding claim 14, the apparatus of claim 1 is discussed above. Hashimoto et al also teach the addition of a salt of a tertiary amine; namely, distearylaminedimethylammonium chloride (column 10, lines 10-15).

It is noted that *In re Best* (195 USPQ 430) and *In re Fitzgerald* (205 USPQ 594) discuss the support of rejections wherein the prior art discloses subject matter which there is reason to believe inherently includes functions that are newly cited or is identical to a product instantly claimed. In such a situation

the burden is shifted to the applicants to "prove that subject matter shown to be in the prior art does not posses characteristic relied on" (205 USPQ 594, second column, first full paragraph). Because Hashimoto et al teach the apparatus comprising a salt of a tertiary amine in the form of distearylaminedimethylammonium chloride (column 10, lines 10-15), Hashimoto et al anticipate the apparatus of claim 1 wherein the sacrificial reductant is a salt of a tertiary amine.

Regarding claim 15, Hashimoto et al teach the apparatus of claim 1, further comprising an optical scanner for scanning the support; namely, the optical fiber is a scanner that sends the electrochemiluminescent signal to a photomultiplier and photocounter (column 29, lines 24-52).

Regarding claim 16, Hashimoto et al teach the apparatus of claim 1, further comprising a fluid handling system for the support; namely, the apparatus of Figure 4 further comprises means for transferring fluid containing reaction cells (column 29, lines 24-52).

Regarding claim 17, Hashimoto et al teach the apparatus of claim 1, further comprising a temperature control system for the support; namely, temperature controller 34 (Figure 4 and (column 29, lines 24-52).

6. Claim 12 is rejected under 35 U.S.C. 102(b) as being anticipated by Hashimoto et al (U.S. Patent No. 5,776,672, issued 7 July 1998) as evidenced by Roberts et al (U.S. Patent Application Publication No. US 2004/062930 A1, published 1 April 2004) and White et al (J. Am. Chem. Soc., vol. 86, pp. 941-942 (1964)).

Regarding claim 12, Hashimoto et al teach a apparatus for detecting a target nucleic acid. In single exemplary embodiment that is an alternate embodiment from that presented above, Hashimoto et al teach Figure 4, which comprises a support comprising an electrode and a nucleic acid probe attached thereto; namely, reaction cell 32 having a bottom surface with electrode 33 having a nucleic acid probe attached thereto (column 29, lines 24-52). The nucleic acid probe comprises a sequence complementary to the target nucleic acid sequence; namely, a gene sample (column 29, lines 24-52). Hashimoto et al further

teach an intercalating agent is present (column 29, lines 24-52); the intercalating agent is the noncovalent photoelectrochemical label comprises $[Ru(bipy)_3]^{2+}$ (e.g., tris (bipyridyl) ruthenium salt; column 4, line 30), which is selective for double-stranded nucleic acids over single stranded nucleic acids. Hashimoto et al teach further teach a sacrificial reductant; namely, stearylamine (column 10, lines 10-15), which is a primary amine.

Hashimoto et al further teach a light source; namely, electrochemiluminescence of the intercalating photoelectrochemical labels is enhanced by enhancers (column 5, lines 1-5) including luciferin H2O2 and luminol, which excite the intercalating photoelectrochemical labels (column 20, lines 45-50). Because the intercalating photoelectrochemical label is excited, the light source is of sufficient energy to initiate a photoelectrochemical reaction of the label for irradiating the probe. Hashimoto et al further teach a data collection controller for measuring a current at the electrode in the form of a potentiostat and a computer (column 11, lines 39-44).

As evidenced by Roberts, primary amines are recognized in the prior art as sacrificial reductants. Roberts teaches that primary amines undergo electrochemical reduction (paragraph 0062), and are thus sacrificial reductants.

As evidenced by White et al, the emission of light by luminol as being between 350 and 600 nm (Figure 1), which is in the visible range.

Response to Arguments

A. Applicant argues on pages 8-9 of the Remarks that Hashimoto et al do not teach a single embodiment reciting all of the limitations of claim 1.

However, as indicated above, Figure 4 of Hashimoto et al teaches each and every limitation of claim 1, and therefore anticipates the claim.

B. Applicant further argues on pages 9-11 of the Remarks that Hashimoto et al do not teach a sacrificial reductant because the surfactants are "apparently immobilized" to the carrier.

However, Hashimoto et al teach the apparatus comprises stearylamine (column 10, lines 10-15), which is a primary amine. At the time of the invention (as discussed by Roberts) it was known in the art that primary amines undergo electrochemical reduction (paragraph 0062), and are thus sacrificial reductants. While the previous citation of Hashimoto et al (column 11 lines 15-20) does teach **coating** the carrier with surfactants, it does **not** teach the surfactants are **immobilized** because not all coatings are immobilized to their carrier. In addition, the alternate citation listed above done not teach a coating , but rather teaches the mere presence of the surfactants in the apparatus (column 10, lines 10-15).

C. Applicant further asserts on pages 9-11 of the Remarks that quaternary ammonium salts lack a lone pair and thus cannot function as a sacrificial reductant.

However, Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the **claims** patentably distinguishes them from the references. Claim 14 is drawn to a salt of a tertiary amine. Quaternary ammonium salts are a species of the broadly claimed genus of salts of tertiary amines. Thus, the language of the **claims** have not distinguished how the species of quaternary ammonium salts are excluded from the broadly claimed genus of salts of tertiary amines. The rejection is therefore proper and is **maintained**.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly

owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. It is noted that a prior art reference is considered as a whole and for all it stands for. Thus, while the rejections listed below present modified interpretations of the teachings of Hashimoto et al solely for the purpose of clarity, the claims remain rejected over same prior art as in the previous Office Action. The teachings of Roberts et al are solely relied upon as evidence of the electrochemical behavior of amines.

10. Claims 1, 3, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto et al (U.S. Patent No. 5,776,672, issued 7 July 1998) as evidenced by Roberts et al (U.S. Patent Application Publication No. US 2004/062930 A1, published 1 April 2004), and in view of Gillespie et al (U.S. Patent No. 5,482,834, issued 9 January 1996).

Regarding claims 3 and 5, Hashimoto et al teach the apparatus of claim 1 for detecting a target nucleic acid. In a single exemplary embodiment, Hashimoto et al teach Figure 4, which comprises a support comprising an electrode and a nucleic acid probe attached thereto; namely, reaction cell 32 having a bottom surface with electrode 33 having a nucleic acid probe attached thereto (column 29, lines 24-52). The nucleic acid probe comprises a sequence complementary to the target nucleic acid sequence; namely, a gene sample (column 29, lines 24-52). Hashimoto et al further teach an intercalating agent is present (column 29, lines 24-52); the intercalating agent is the noncovalent photoelectrochemical label comprises $[Ru(bipy)_3]^{2+}$ (e.g., tris (bipyridyl) ruthenium salt; column 4, line 30), which is selective for double-stranded nucleic acids over single stranded nucleic acids. Hashimoto et al teach further teach a sacrificial reductant; namely, stearylamine (column 10, lines 10-15), which is a primary amine. Figure 4

further comprises a light source; namely, optical fiber 37, which causes electrochemiluminescence (column 29, lines 24-52), and therefore is of sufficient energy to initiate a photoelectrochemical reaction of the label for irradiating the probe. Hashimoto et al further teach a data collection controller for measuring a current at the electrode in the form of a potentiostat and a computer (column 11, lines 39-44).

As evidenced by Roberts, primary amines are recognized in the prior art as sacrificial reductants. Roberts teaches that primary amines undergo electrochemical reduction (paragraph 0062), and are thus sacrificial reductants.

While Hashimoto et al teach the device uses nucleic acid probes and targets (Abstract), Hashimoto is silent with respect to RNA.

However, Gillespie teaches immobilization of RNA on solid supports (column 3, lines 5-7) as well as using RNA targets (column 12, lines 23-25) with the added advantage that RNA hybridizations allow measurement of variations in expression of genes (column 22, lines 17-24).

It would therefore have been obvious to a person or ordinary skill in the art at the time the claimed invention was made to have modified the immobilized nucleic acid systems of Hashimoto et al with RNA as taught by Gillespie et al with a reasonable expectation of success. The ordinary artisan would have been motivated to make such a modification because said modification would have resulted an apparatus having the added advantage of allowing measurement of variations in expression of genes as explicitly taught by Gillespie (column 22, lines 17-24).

11. Claims 1 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto et al (U.S. Patent No. 5,776,672, issued 7 July 1998) as evidenced by Roberts et al (U.S. Patent Application Publication No. US 2004/062930 A1, published 1 April 2004), and in view of Dabiri et al (U.S. Patent No. 5,871,628, issued 16 February 1999).

Regarding claim 11, Hashimoto et al teach the apparatus of claim 1 for detecting a target nucleic acid. In a single exemplary embodiment, Hashimoto et al teach Figure 4, which comprises a support

comprising an electrode and a nucleic acid probe attached thereto; namely, reaction cell 32 having a bottom surface with electrode 33 having a nucleic acid probe attached thereto (column 29, lines 24-52). The nucleic acid probe comprises a sequence complementary to the target nucleic acid sequence; namely, a gene sample (column 29, lines 24-52). Hashimoto et al further teach an intercalating agent is present (column 29, lines 24-52); the intercalating agent is the noncovalent photoelectrochemical label comprises $[Ru(bipy)_3]^{2+}$ (e.g., tris (bipyridyl) ruthenium salt; column 4, line 30), which is selective for double-stranded nucleic acids over single stranded nucleic acids. Hashimoto et al teach further teach a sacrificial reductant; namely, stearylamine (column 10, lines 10-15), which is a primary amine.

Figure 4 further comprises a light source; namely, optical fiber 37, which causes electrochemiluminescence (column 29, lines 24-52), and therefore is of sufficient energy to initiate a photoelectrochemical reaction of the label for irradiating the probe. Hashimoto et al further teach a data collection controller for measuring a current at the electrode in the form of a potentiostat and a computer (column 11, lines 39-44).

As evidenced by Roberts, primary amines are recognized in the prior art as sacrificial reductants. Roberts teaches that primary amines undergo electrochemical reduction (paragraph 0062), and are thus sacrificial reductants.

Hashimoto et al are silent with respect to lasers.

However, Dabiri et al teach a system for detecting nucleic acids in an array (e.g., a system for DNA sequencing using a capillary array; Abstract) comprising electrodes (column 3, lines 65-67) and an argon laser light source with the added advantage that the laser provides frequencies compatible with a wide variety of fluorescent dyes (column 7, lines 30-36).

It would therefore have been obvious to a person or ordinary skill in the art at the time the claimed invention was made to have modified the system of Hashimoto et al with a laser as taught by Dabiri et al with a reasonable expectation of success. The ordinary artisan would have been motivated to make such a modification because said modification would have resulted in an apparatus having the

added advantage of having a light source providing frequencies compatible with a wide variety of fluorescent dyes as explicitly taught by Dabiri et al (column 7, lines 30-36).

12. Claims 1 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto et al (U.S. Patent No. 5,776,672, issued 7 July 1998) as evidenced by Roberts et al (U.S. Patent Application Publication No. US 2004/062930 A1, published 1 April 2004), and in view of Noblett (U.S. Patent No. 6,362,004 B1, issued 26 March 2002).

Regarding claim 18, Hashimoto et al teach the apparatus of claim 1 for detecting a target nucleic acid. In a single exemplary embodiment, Hashimoto et al teach Figure 4, which comprises a support comprising an electrode and a nucleic acid probe attached thereto; namely, reaction cell 32 having a bottom surface with electrode 33 having a nucleic acid probe attached thereto (column 29, lines 24-52). The nucleic acid probe comprises a sequence complementary to the target nucleic acid sequence; namely, a gene sample (column 29, lines 24-52). Hashimoto et al further teach an intercalating agent is present (column 29, lines 24-52); the intercalating agent is the noncovalent photoelectrochemical label comprises $[Ru(bipy)_3]^{2+}$ (e.g., tris (bipyridyl) ruthenium salt; column 4, line 30), which is selective for double-stranded nucleic acids over single stranded nucleic acids. Hashimoto et al teach further teach a sacrificial reductant; namely, stearylamine (column 10, lines 10-15), which is a primary amine.

Figure 4 further comprises a light source; namely, optical fiber 37, which causes electrochemiluminescence (column 29, lines 24-52), and therefore is of sufficient energy to initiate a photoelectrochemical reaction of the label for irradiating the probe. Hashimoto et al further teach a data collection controller for measuring a current at the electrode in the form of a potentiostat and a computer (column 11, lines 39-44).

As evidenced by Roberts, primary amines are recognized in the prior art as sacrificial reductants. Roberts teaches that primary amines undergo electrochemical reduction (paragraph 0062), and are thus sacrificial reductants.

Hashimoto et al are silent with respect to machine-readable identifying indicia.

However, Noblett et al teach the use of microarrays comprising immobilized nucleic acids (column 1, lines 20-30) having machine readable identifying indicia (e.g., fiducials [Abstract], wherein the fiducials are scanned by a positioning system; column 6, lines 41-48) with the added advantage of allowing positioning and alignment of the substrate for spot analysis and comparison procedures (Abstract).

It would therefore have been obvious to a person or ordinary skill in the art at the time the claimed invention was made to have modified the system of Hashimoto et al with the machine readable identifying indicia as taught by Noblett et al with a reasonable expectation of success. The ordinary artisan would have been motivated to make such a modification because said modification would have resulted in an apparatus allowing positioning and alignment of the substrate for spot analysis and comparison procedures as explicitly taught by Noblett et al (Abstract).

Response to Arguments

The remaining arguments regarding the rejections under 35 USC 103(a) and rely on arguments set forth to address the rejections of independent claim 1 under 35 USC 102(b). These arguments are addressed on pages 7-8 above. Since the arguments regarding independent claim 1 were not persuasive, the rejections of the dependent claims are maintained.

Conclusion

13. No claim is allowed.

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

15. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert T. Crow whose telephone number is (571) 272-1113. The examiner can normally be reached on Monday through Friday from 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram Shukla can be reached on (571) 272-0735. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RAM R. SHUKLA, PH.D.
SUPERVISORY PATENT EXAMINER

Robert T. Crow
Examiner
Art Unit 1634